Last DSM Algorithm
pp-Version for 2004

03/22/2004

Input Bits

Input Channel	Bit Description
0	CTB Multiplicity Bits 0:15–Multiplicity
1	VTX Information Bit 0–BBC TAC difference in window Bit 1–Unused Bit 2–BBC East small-tile ADC sum over threshold 0 Bit 3–BBC West small-tile ADC sum over threshold 0 Bit 4 -- Unused Bit 5 -- Unused Bit 6–ZDC East ADC sum over threshold0 Bit 7–ZDC West ADC sum over threshold0 Bit 8–ZDC East TAC in window Bit 9–ZDC West TAC in window Bit 10:15–Unused
2	CTB upper output bits Unused
3	EMC Information Bits 0:1–BEMC Jet Patch bits Bits 2:3–BEMC high-tower bits Bit 4 - Unused Bit5–J/Ψ-bit from BEMC-high towers Bit 6–Adjacent jet patch bit Bits 7:8–EEMC jet patch bits Bits 9:10–EEMC high-tower bits Bits 11:15 - Unused
4	Miscellaneous Information Bit 0–Blue bunch filled Bit 1–Yellow bunch filled Bits 2:15 - Unused
5	FPD Information Bit 0–FPD East trigger conditions met Bit 1–FPD West trigger conditions met Bits 2:15 - Unused
6	Special Trigger Requests Bits 0: 13 and 15–Unused Bit 14–Zero-bias bit
7	Unused

Registers

Register	Register Description
0	16-bit low threshold for the CTB Multiplicity

Output Bits

Bit	Description
Bits 0:15	
0	CTB multiplicity > th0 (Reg. 0)
1	Both BBC small-tile ADC sums over threshold
2	BBC TAC difference in window
3	(ZDC East ADC>th and TAC in window) OR (ZDC West ADC > th and TAC in window)
4	FPD East ADC sum > th OR FPD West ADC sum > th
5	EMC adjacent jet-patch trigger
6/7	BEMC high tower bits (coding three thresholds)
8/9	BEMC jet-patch bits (coding three thresholds)
10/11	EEMC high tower bits (coding three thresholds)
12	EEMC jet-patch bit (second bit/threshold)
13	BEMC-J/Ψ
14	Blue bunch filled AND yellow bunch filled
15	Zero bias trigger
Bits 16:31	Same definitions as bits 0:15

Internal Logic

- The CTB multiplicity is compared to one threshold
- No Special Bits.
- Bits 6/7, 8/9, 10/11 code three thresholds; Bit 12 is the second threshold only.